

## What do animals in winter?



In winter, you can observe a drop off in animal activity, whether they be mammals, reptiles, insects or even fish. However, not all animals behave the same way in the face of winter's harshness. So what do they do?

To confront the cold, animals adapt different behaviours depending on either they stay where they are and therefore have to find a way to fight the cold, or alternatively leave and find a warmer place (the latter is done by some birds, insects, butterflies and fish).

When animals stay where they are, they must prepare themselves to fight the cold. They do so in three different ways:

- Morphological adaptation;
- Physiological adaptation;
- Behavioural adaptation.

Whilst some only adapt morphologically, others adapt to winter in all three ways. Each species has its own trick.

## Adaptation



Some animals continue to move around in winter, living almost normally. Almost, because in reality they do adapt to lower temperatures and a shortage of food.

Some animals opt for morphological adaptation, which means modifying their body, such as the fox, which develops a “winter coat”. You see this in some mammals but also in certain birds, who fluff up their plumage. Other animals, such as the hare and stoat, go even further in modifying their coat: they turn white in winter to camouflage them in the snowy landscape and not be seen by predators.

Other animals, such as the great tit, change their behaviour and feeding habits. In fact, for the majority of the year the great tit eats insects, but during the winter it struggles to find insects and therefore eats seeds instead. As for the red squirrel, it simply builds up reserves of food throughout the year in preparation for winter, then once winter is here it continues to live normally. Only in severe cold, which can be fatal, will it take shelter until the temperature is milder. In fact, January-February is one of the breeding seasons for red squirrels.



You will also see some animals change physiologically, meaning that they change how their body works: this is the case of animals that hibernate or spend winter sheltering.

**Hibernation**

When the winter cold arrives, some animals adopt a behaviour called torpor: they fall into a very deep sleep, in a shelter, and only rarely wake up to get something from their food reserves that they built up prior to hibernating. When an animal hibernates, there is a drop in:

- Oxygen consumption;
- Respiratory rate;
- Heart rate (from 350 to 3 beats per minute for the ground squirrel, and from 500 to 5 for the garden dormouse);
- Blood flow (there is a special flow for the brain, heart and fatty tissue);
- Growth hormones.



Here are just some of the animals that hibernate: hedgehogs, garden dormice, bats, frogs, lizards, grass snakes...

Beware that some animals do not hibernate but do spend winter sheltering. Famously the bear, that there is no risk of finding in our garden, spends winter sheltering, rather than hibernating.

### **Winter sheltering (semi-hibernation)**

When you think of hibernation you think of bears. However, that is wrong. In no way is the bear in a state of torpor, as it does not sleep deeply, far from it. The bear simply slows its activity; so, do not hang around near a bear, thinking it is hibernating, stay far away. An animal that does semi-hibernate and that you have more chance of coming across than a bear is the badger! You also see this drop in activity in some insects, such as bees, who rest next to each other to maintain their temperature at 35°C and eat the honey that they have stored (which is why it is important to leave it there).

### **And where are the insects in all of this?**

Unfortunately, the majority of insects die in winter. This is the case with the magnificent dragonflies and grasshoppers. But some of them can semi-hibernate, even if all those who do don't survive. Alongside bees, this also includes firebugs, ladybirds, earwigs, crickets and lacewings.

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